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REMARKS

Applicant acknowledges receipt of the Office Action dated April 21, 2005, in which the Examiner rejected claims 1-7 and 21-27 under § 112, first or second paragraph, rejected claims 15-17 as anticipated by Rhoades (US 3,359,856); rejected claims 21, 23, 24, and 27 as anticipated by Grgurich et al. (US 3,446,029); rejected claims 1-3 as obvious over Marshall (US 2,952,984) in view of Rhoades; rejected claims 8 and 10-12 as obvious Rhoades in view of Marshall; rejected claim 9 as obvious over Rhoades in view of Marshall and further in view of Grgurich; rejected claim 13 as obvious over Rhoades in view of Marshall and further in view of Rambo (US 5,114,451); rejected claims 15-18 and 21-26 as obvious over Rambo in view of Rhoades; and rejected claim 20 as obvious over Rambo in view of Rhoades and further in view of Grgurich; and indicated that claims 5-7, 14, and 19 would be allowable if placed in independent form.

Applicant thanks the Examiner for the thorough and considered office action. Applicant has amended the claims and respectfully traverses these rejections for the reasons set out below.

§ 112 Rejection of claims 1-7 and 21-27

The Examiner rejected claims 1-7 and 21-27 on the grounds that the claims as filed did not include separate sources for the overhead vapor stream and the overhead vapor product. Claims 1 and 21 have been amended to require a separator or separation step, respectively. Applicants respectfully submit that this amendment cures this grounds for rejection. Applicant therefore requests that this rejection be withdrawn.

§ 102 Rejection of claims 15-17 as anticipated by Rhoades

Claim 15 has been amended to require that the liquefied natural gas is preheated through heat exchange with both an overhead vapor stream a compressed overhead vapor product. Because Rhoades teaches only a single heat exchange for preheating the feed stream, Rhoades does not anticipate or suggest the limitations of claim 15. Claim 15 is therefore allowable. Claims 16 and 17 have been canceled.

§ 102 Rejection of claims 21, 23, 24, and 27 as anticipated by Grgurich et al.

In addition to the aforementioned amendment incorporating the separator, claim 21 has been amended to require the step (c) of compressing the overhead vapor product so as to form a

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compressed overhead vapor product and to require (in step (d)) that the liquefied natural gas be heated by exchanging heat with the compressed overhead vapor product. Grgurich expressly teaches that the vapors from drum 74 be fully condensed so that they "exit from the exchanger 8 as a liquid." (col. 4, line 70). Thus, Grgurich teaches away from and does not anticipate or render obvious the present system in which the overhead vapor product is compressed before it exchanges heat with the liquefied natural gas.

§ 103 Rejection of claims 1-4 as obvious over Marshall in view of Rhoades

Claim 1 has been amended so that it now requires a first heat exchanger for transferring heat from the overhead vapor stream of said distillation column to the liquefied natural gas feed, a separator for separating the liquid and gas phases of the resulting condensed overhead vapor stream, and a second heat exchanger for exchanging heat between the heated liquefied natural gas feed and the separated gas phase. Neither Marshall nor Rhoades teaches or suggests a system in which a compressor is used to compress (and heat) the overhead vapor stream and use the resulting compressed stream to further preheat the feed stream. Thus claim 1 is allowable over the combined references, along with dependent claims 2-4.

§ 103 Rejections of claims 8-13

Claims 8-13 have been canceled.

§ 103 Rejection of claims 15-18 and 21-26 as obvious over Rambo in view of Rhoades

Claims 15 and 21 have been amended as discussed above to recite a combination of heat exchangers, separation, and compression. As acknowledged by the Examiner, none of the cited references teaches using the vapor phase of the LNG to heat the feedstream twice, with a separation and compression of the vapor phase between the first and second heat exchanges. Rambo expressly teaches a single heat exchanger on each feed line into the distillation column. Likewise, Rhoades teaches a single heat exchanger on each feed line into the distillation column, and does not use the heat of compression to provide a second heat exchange. Nothing in either reference suggests such a system. In the absence of any such suggestion, the mere fact that it would be advantageous to provide a product in liquid form is not sufficient to support a rejection of the amended claims as obvious. Therefore Applicant respectfully requests reconsideration of this rejection.

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§ 103 Rejection of claim 20 as obvious over Rambo in view of Rhoades and further in view of Grgurich

Claim 20 has been canceled.

Allowable claims

The Examiner indicated that claims 5-7, 14, and 19 would be allowable if placed in independent form. Accordingly, claims 5 and 14 have been amended to incorporate the limitations of the claims from which they formerly depended. Claim 19 depends indirectly from amended claim 15, which Applicant submits is now allowable for the reasons set out above.

Conclusion

Applicant believes that he has responded to each grounds for rejection and therefore respectfully request that the Examiner reconsider and withdraw the rejections. If the Examiner has any questions or otherwise feels it would be advantageous, he is encouraged to telephone the undersigned at (713)238-8043.

Respectfully submitted,



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